

**REMARKS**

Claims 1, 3-5, 7-11, 13, 15-17 and 19-96 are pending, of which claims 1, 13, 25, 38, 60, 73, 80 and 87 are independent. Claims 2, 6, 12, 14, and 18 have been previously canceled. In the July 31, 2008 Office Action, claims 1, 3-5, 7-11, 13, 15-17 and 19-96 were rejected.

Applicant thanks the Examiner for entering the Amendments of the September 30, 2008 Response (Advisory Action at page 1). Claims 1, 7, 11, 13, 19, 23 25, 34, 35, 37, 38, 56, 57, 59, 60, 69, 70, 72, 73, 80, 82, 84, and 87 are amended herein. The above listing of claims reflects the present amendments to the claims in response to the October 24, 2008 Advisory Action.

Applicant respectfully submits that the presently pending claims are in a condition for allowance and respectfully requests that the Examiner reconsider the rejection of claims 1, 3-5, 7-11, 13, 15-17 and 19-96 and pass those claims to allowance.

**I. Claim Rejections under 35 U.S.C. §102**

In the Office Action, the Examiner rejects claims 38-41, 54-72, and 80-96 under 35 U.S.C. §102(a) as being anticipated by AeroSim Blockset User's Guide (hereafter "AeroSim"). In the Advisory Action, the Examiner maintained the rejection. Applicant respectfully traverses the rejection.

**A. Independent Claim 38**

Independent claim 38 recites:

38. A computer implemented system for designing a target system in which a planetary environment is one of the factors for designing the target system, the system comprising:

a model storage for storing and providing models necessary to design the target system *wherein the model storage provides a plurality of wind models, wherein the wind models include at least one discrete wind turbulence model;* and

a design unit for designing the target system by utilizing the models provided by the model storage.

Applicant amends claim 38 to clarify that the model storage provides a plurality of *wind models*, and that the wind models include at least one *discrete wind turbulence model*.

Applicant respectfully submits that AeroSim fails to disclose at least ***wherein the model storage provides a plurality of wind models, wherein the wind models include at least one discrete wind turbulence model***, which is present in amended independent claim 38.

The Examiner has argued that AeroSim discloses a discrete wind turbulence model at page 65 (Office Action at page 5). The Examiner notes that “in the absence of an elaboration of ‘discrete’ in the Application description, the claims reciting ‘a discrete wind turbulence model’ were interpreted according to the dictionary definition” (Advisory Action at page 2).

The Examiner also states that “if input, internals, and output of a model are discrete, then the model IS discrete” (Advisory Action at page 2, emphasis in original). However, the Examiner’s definition of a “discrete wind turbulence model” is incorrect. AeroSim does not disclose a ***discrete wind turbulence model***.

The words of a claim must be given their plain meaning unless such meaning is inconsistent with the specification (MPEP §2111.01(I)). It is the use of the words in the context of the written description *and customarily by those skilled in the relevant art* that accurately reflects both the “ordinary” and the “customary” meaning of the terms in the claims (*Ferguson Beauregard/Logic Controls v. Mega Systems*, 350 F.3d 1327, 1338, 69 USPQ2d 1001, 1009 (Fed. Cir. 2003)).

As noted in the Specification of the present Application at page 16, a “discrete wind turbulence model” is defined by the U.S. Military Handbook MIL-HDBK-1797, 19 December 1997, and by U.S. Military Specification MIL-F-8785C, 5 November 1980 (Response at page 15-16). According to the cited references, turbulence is a stochastic process defined by velocity spectra. It is these *velocity spectra* that make a wind turbulence model *discrete* or *continuous*. In particular, a *continuous* representation of the *velocity spectra* makes a wind turbulence model *continuous*, while a *discrete* representation of the *velocity spectra* makes a wind turbulence model *discrete*.

The Examiner’s interpretation of a “discrete wind turbulence model” is not consistent with the definition referenced in the Specification, nor the customary use of the term by those

skilled in the art. As defined by the above-cited Handbook and Specification, a discrete wind turbulence model must have a discrete representation of the velocity spectra.

AeroSim utilizes the von Karman model of wind turbulence (AeroSim at page 65). The von Karman model of wind turbulence is a *continuous* wind turbulence model (see, e.g., MIL-HDBK-1797 at page 657). Therefore, AeroSim does not disclose a ***discrete wind turbulence model***.

Since AeroSim does not disclose a ***discrete wind turbulence model***, AeroSim does not disclose wherein the model storage provides a plurality of wind turbulence models including at least a discrete wind turbulence model, as recited in claim 38. For at least the reasons presented above, Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 38 under 35 U.S.C. §102(b).

#### **B. Dependent Claims 39-41 and 54-59**

Claims 39-41 and 54-59 depend on base claim 38 and, as such, incorporate all of the features of claim 38. Claims 39-41 and 54-59 therefore are in condition for allowance for at least the same reasons presented above relative to claim 38. Applicant respectfully requests withdrawal of the 35 U.S.C. §102(b) rejection of claims 39-41 and 54-49.

#### **C. Independent Claim 60**

Independent claim 60 recites:

60. A computer implemented system for designing a target system in which an aerospace or aeronautic model is one of the elements for designing the target system, the system comprising:

    a model storage for storing and providing models necessary to design the target system, wherein the model storage provides a plurality of models for equations of motion, wherein the plurality of models for equations of motion include at least one model for equations of motion with simple variable mass and at least one model for equations of motion with custom variable mass where the way the mass changes may be specified; and

    a design unit for designing a model of the target system by utilizing the models provided by the model storage.

Applicant amends claim 60 to clarify what is meant by “custom variable mass.”

Applicant respectfully submits that AeroSim fails to disclose that *the model storage provides a plurality of models for equations of motion, wherein the plurality of models for equations of motion include at least one model for equations of motion with simple variable mass and at least one model for equations of motion with custom variable mass where the way the mass changes may be specified*, which is present in claim 60.

The Examiner claims that AeroSim discloses an equation of motion with custom variable mass in the “Fuel Tank Model” example at page 177 (Office Action at page 7). However, the “Fuel Tank Model” discussed on page 177 of AeroSim is not a model for an *equation of motion*.

The Examiner argues at length that the “Fuel Tank Model” is a model having a custom variable mass (Advisory Action at page 2). Applicant believes that the Examiner misconstrues the Applicant’s argument. Even if the cited “Fuel Tank Model” is a model having a custom variable mass, it is not a model for an *equation of motion*, as recited in claim 60. Instead, it is a model for an *equation of mass*. An equation of mass is different than an equation of motion.

Equations of motion are equations that describe the *motion* of a system as a function of time. For example, equations of motion describe a system’s velocity, acceleration, or position as a function of time. In contrast, the cited “Fuel Tank Model” of AeroSim describes the *mass* and *moment of inertia* of the fuel tank as a function of time. An object’s mass over time does not describe its motion over time, but rather an object’s *resistance to force*. Further, an object’s moment of inertia over time does not describe an object’s motion over time, but rather describes an object’s *resistance to torque*. For example, calculating that an object has a mass of 250kg at time  $t_1$  and a mass of 150kg at time  $t_2$  (or a moment of inertia of  $15 \text{ kg m}^2$  at time  $t_1$  and a moment of inertia of  $10\text{kg m}^2$  at time  $t_2$ ) does not inform us of the object’s motion over time.

AeroSim does not disclose *at least one model for equations of motion with simple variable mass and at least one model for equations of motion with custom variable mass where the way the mass changes may be specified*, which is present in claim 60. Therefore, Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 60 under 35 U.S.C. §102(b).

**D. Dependent Claims 61-72**

Claims 61-72 depend on base claim 60 and, as such, incorporate all of the features of claim 60. Claims 61-72 are in condition for allowance for at least the same reasons presented above relative to claim 60. Applicant respectfully requests withdrawal of the 35 U.S.C. §102(b) rejection of claims 61-72.

**E. Independent Claim 80**

Independent claim 80 recites:

80. A computer-readable medium holding instructions executable in a computer for the design of a target system, wherein a planetary environment is one of factors for designing the target system, the instructions comprising:

instructions for providing at least one wind turbulence model necessary to design the target system *wherein the at least one wind turbulence model includes at least one discrete wind turbulence model*; and

instructions for incorporating the at least one wind turbulence model to the target system.

Applicant amends independent claim 80 for clarity. Applicant respectfully submits that the AeroSim manual fails to disclose or suggest the *wind turbulence model includes at least one discrete wind turbulence model*, which is present in claim 80. As discussed above relative to claim 38, AeroSim does not disclose or suggest *at least one discrete wind turbulence model*. For at least the reasons presented above, Applicant respectfully requests withdrawal of the rejection of claim 80 under 35 U.S.C. §102(b).

**F. Dependent Claims 81-86**

Claims and 81-86 depend on base claim 80 and, as such, incorporate all of the features of claim 80. Claims 81-86 are therefore in condition for allowance for at least the same reasons presented above relative to claim 80. Applicant respectfully requests withdrawal of the 35 U.S.C. §102(b) rejection of claims 81-86.

**G. Independent Claim 87**

Independent claim 87 recites:

87. A computer-readable medium holding instructions executable in a computer for the design of a target system, the instructions for comprising:  
instructions for providing equations of motion models necessary to design the target system *wherein the equations of motion models include at least one of simple variable mass models and custom variable mass models where the way that mass changes is specified*; and  
instructions for incorporating the equations of motion models into the target system

Applicant respectfully submits that the AeroSim manual fails to disclose or suggest at least *the equations of motion models include at least one of simple variable mass models and custom variable mass models where the way that mass changes is specified*, which is present in claim 87. As discussed above relative to claim 60, AeroSim does not disclose a custom variable mass equation of motion model. For at least the reasons presented above, Applicant respectfully requests withdrawal of the rejection of claim 87 under 35 U.S.C. §102(b).

**H. Dependent Claims 88-96**

Claims 88-96 depend on base claim 87 and, as such, incorporate all of the features of claim 87. Therefore, claims 88-96 are in condition for allowance for at least the same reasons presented above relative to claim 87. Applicant respectfully requests withdrawal of the 35 U.S.C. §102(b) rejection of claims 88-96.

**II. Claim Rejections under 35 U.S.C. §103****A. Dependent Claims 42-53**

In the Office Action, the Examiner rejects claims 42-53 under 35 U.S.C. §103(a) as being unpatentable over AeroSim in view of FDC 1.2 – A Simulink Toolbox for Flight Dynamics and Control Analysis by Marc Rauw (hereafter “Rauw”). Applicant respectfully traverses the rejection.

Claims 42-53 depend from claim 38, and therefore include each and every element of claim 38. As noted above in relation to the 35 U.S.C. §102(b) rejection of claim 38, AeroSim does not disclose or suggest at least ***wherein the model storage provides a plurality of wind models, wherein the wind models include at least one discrete wind turbulence model***, which is present in claim 38. The addition of Rauw does not cure the factual defects of AeroSim with respect to this feature of claim 38. Rauw is silent as to a discrete wind turbulence model.

In light of the above, Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 42-53 under 35 U.S.C. §103(a).

#### **B. Independent Claim 1**

The Examiner rejects claim 1 under 35 U.S.C. §103(a) as being unpatentable over AeroSim in view of Rauw, and further in view of an alleged admission of prior art (hereafter “AAPA”). Applicant respectfully traverses the rejection.

Applicant’s independent claim 1 recites:

1. A computer-implemented method for modeling a target system, the method comprising:
  - identifying a first block that represents multiple component models in a block diagram model of a target system;
  - displaying a user interface in response to a user action indicating a selection of the first block, the user interface including a mechanism that provides the user with the multiple component models;
  - receiving a user selection that selects a first component model from the multiple component models;
  - incorporating the first component model into the model of the target system using the first block;
  - saving the model of the target system that includes the first component model in a memory; and
  - switching the first block to represent a second component model in response to a user action indicating a selection of the second component model in the user interface, without replacing the first block with a second block representing the second component model.***

The Examiner states, in the Advisory Action:

Applicant argues ... that AeroSim fails to teach “switching the first block to represent a second component model by selecting the second component model in the user interface without replacing the first block with a second block representing the second component model.”

Examiner does not see these features expressed in the claims ... although a claim should be interpreted in light of the specification disclosure, it is improper to read limitations into the claims.

Applicant respectfully submits that the quoted language is recited in claim 1.

Specifically, the quoted language constitutes lines 14-16 of claim 1.

The Examiner recognizes that AeroSim and Rauw, alone or in combination, do not disclose or suggest at least the feature of *switching the first block to represent a second component model in response to a user action indicating a selection of the second component model in the user interface, without replacing the first block with a second block representing the second component model*, which is present in claim 1 (Office Action at pages 19-20). The Examiner instead relies on an alleged admission of prior art by the Applicant as disclosing this feature of claim 1.

In the Office Action, the Examiner asserts:

Applicant admits that it is “a standard mechanism used in computer modeling and simulation packages such as Simulink” that “upon selecting the desired component model from one of the user interfaces, the corresponding functionality of the desired component model can be included in the symbol representing the models as, for example, one of a selection of pre-built components models can be copied or referred to in the symbol.”

The Examiner cites pages 20-21 of the Specification for this admission. While including the functionality of a component model in the symbol representing the models by copying or referring to a pre-built component model in the symbol is a standard mechanism in modeling and simulation packages, this is not related to *switching the first block to represent a second component model in response to a user action indicating a selection of the second component model in the user interface, without replacing the first block with a second block representing the second component model*, as recited in claim 1.

The passage cited by the Examiner describes the mechanics of *including* desired functionality in a symbol. The passage is a general description of how a block in a block diagram may be given a specified functionality. In contrast, the claim recites ***switching the first block to represent a second component model***. No *switching* takes place in the cited passage. The cited passage merely describes how to include the functionality of a selected component model in a block, and not how to switch a block to represent a different component model.

Further, claim 1 recites that the switching of the first block to represent a second component model is accomplished ***without replacing the first block with a second block representing the second component model***. The cited passage does not teach or suggest switching between a first component model and a second component model without replacing the block with a second block.

The alleged admission on pages 20-21 of the Specification must be read in the context of the Specification as a whole (MPEP §2141.02). The Specification notes that “in the conventional systems, it is required to replace an atmosphere model to change between atmosphere models, to replace a wind turbulence model to change between wind turbulence model, and to replace equations of motion model to change between equations of motion models” (Specification at page 3). In contrast to the conventional systems, the “user interface of the present invention enables users to change a currently incorporated atmosphere model to another atmosphere model without removing the current atmosphere model and then adding another model” (Specification at page 3, emphasis added).

Thus, the Applicant’s alleged admission of prior art does not render claim 1 obvious. Specifically, the alleged admission does not disclose or suggest ***switching the first block to represent a second component model in response to a user action indicating a selection of the second component model in the user interface, without replacing the first block with a second block representing the second component model***. The relied on limitations are explicitly recited in claim 1 and have been acknowledged by the Examiner several times.

In order to further clarify the claim, Applicant amends claim 1 to recite that the switching is ***in response to a user action indicating a selection of the second component model in the***

***user interface.*** Applicant respectfully submits that AeroSim, Rauw, and the AAPA, alone or in any reasonable combination, do not disclose or suggest this feature of amended claim 1.

Therefore, AeroSim, Rauw, and the alleged admission of prior art by the Applicant, alone or in combination, do not disclose or suggest ***switching the first block to represent a second component model in response to a user action indicating a selection of the second component model in the user interface, without replacing the first block with a second block representing the second component model***, which is present in independent claim 1. Therefore, Applicant respectfully requests that the Examiner reconsider and withdraw the 35 U.S.C. §103(a) rejection of claim 1.

### **C. Dependent Claims 4-5 and 7-11**

The Examiner rejects claims 4-5 and 7-11 under 35 U.S.C. §103(a) as being unpatentable over AeroSim in view of Rauw, and further in view of the AAPA. Applicant respectfully traverses the rejection.

Claims 4-5 and 7-11 depend from claim 1 and, as such, incorporate all of the features of claim 1. As noted above in relation to claim 1, AeroSim, Rauw, and the AAPA, alone or in any reasonable combination, do not disclose or suggest at least ***switching the first block to represent a second component model in response to a user action indicating a selection of the second component model in the user interface, without replacing the first block with a second block representing the second component model***, which is present in independent claim 1. Claims 4-5 and 7-11 are therefore in condition for allowance for at least the same reasons presented above with respect to claim 1. Applicant respectfully requests withdrawal of the 35 U.S.C. §103(a) rejection of claims 4-5 and 7-11.

Further, dependent claim 4 recites features that are not present in the cited prior art. In particular, claim 4 recites ***wherein the component models belong to a category of wind turbulence models that include at least a discrete turbulence model***. As noted above in relation to the 35 U.S.C. §102(b) rejection of claim 38, AeroSim does not disclose or suggest this feature of claim 4. Further, the addition of Rauw and the AAPA does not cure the factual deficiencies

of AeroSim with respect to this feature of claim 4. Both Rauw and the alleged AAPA are silent as to a *discrete turbulence model*.

Further, dependent claim 5 recites features that are not present in the cited prior art. In particular, claim 5 recites *wherein the component models belong to a category of equations of motion models that include at least one simple variable mass model and at least one custom variable mass model*. As noted above in relation to the 35 U.S.C. §102(b) rejection of claim 60, AeroSim does not disclose or suggest this feature of claim 5. Further, the addition of Rauw and the AAPA does not cure the factual deficiencies of AeroSim with respect to this feature of claim 5. Both Rauw and the alleged AAPA are silent as to *a category of equations of motion models that include at least one simple variable mass model and at least one custom variable mass model*.

For at least the reasons presented above, Applicant respectfully requests that the Examiner reconsider and withdraw the 35 U.S.C. §103(a) rejections of claims 4-5 and 7-11.

#### **D. Independent Claim 13**

The Examiner rejects independent claim 13 under 35 U.S.C. §103(a) as being unpatentable over AeroSim in view of Rauw, and further in view of the AAPA. Applicant respectfully traverses the rejection.

Independent claim 13 recites:

13. A computer-implemented method for modeling a target system , the method comprising:
  - identifying a first block that represents multiple component models in a block diagram model of a target system;
  - displaying a user interface in response to a user action indicating a selection of the first block, the user interface including a mechanism that provides the user with the multiple component models; and
  - receiving a user selection that selects a first component model from the multiple component models;
  - incorporating the first component model into the model of the target system using the block;
  - saving the model of the target system that includes the first component model in a memory;

*switching the first block to represent a second component model in response to a user action indicating a selection of the second component model in the user interface; and*

incorporating the second component model into the model of the target system by one of copying or referring to the second component model in the block, conditionally evaluating at least a part of the component model, or executing a sequence of modifications to the component model.

In order to further clarify claim 13, Applicant amends claim 13 to recite switching the first block to represent a second component model *in response to a user action indicating a selection of the second component model in the user interface*. Applicant respectfully submit that Aerosim, Rauw, and the AAPA, alone or in any reasonable combination, do not disclose or suggest this feature of amended independent claim 13.

Applicant respectfully submits that AeroSim, Rauw, and the AAPA do not disclose or suggest at least *switching the first block to represent a second component model in response to a user action indicating a selection of the second component model in the user interface*, which is present in amended independent claim 13. The Examiner recognizes that AeroSim and Rauw, alone or in combination, do not disclose or suggest this feature of claim 13 (Office Action at page 25). Instead, the Examiner relies on the AAPA as disclosing this feature of claim 13.

As discussed above in relation to claim 1, the AAPA does not discuss *switching the first block to represent a second component in response to a user action indicating a selection of the second component model in the user interface*. The AAPA discusses including the functionality of a component model in a block, but does not discuss *switching the first block to represent a second component model*.

Further, the AAPA does not disclose or suggest that such a switch may be performed *in response to a user action indicating a selection of the second component model in the user interface*. The alleged admission does not discuss any ways in which a “switch” might be effected.

Further, as noted above in relation to claim 1, the language that the Examiner alleges is missing from claims 1 and 13 (Advisory Action at page 2) is present in claims 1 and 13. The

Applicant has highlighted the relied-upon claim language by marking it in bold and italics above.

Therefore, AeroSim, Rauw, and the AAPA, alone or in combination, do not disclose or suggest at least *switching the first block to represent a second component model in response to a user action indicating a selection of the second component model in the user interface*, as recited by amended independent claim 13. Applicant therefore respectfully requests that the 35 U.S.C. §103(a) rejection of claim 13 be reconsidered and withdrawn.

#### **E. Dependent Claims 16-17 and 19-24**

The Examiner rejects claims 16-17, and 19-24 under 35 U.S.C. §103(a) as being unpatentable over AeroSim in view of Rauw, and further in view of the AAPA. Applicant respectfully traverses the rejection.

Claims 16-17 and 19-24 depend on base claim 13 and, as such, incorporate all of the features of claim 13. As noted above in relation to claim 13, AeroSim, Rauw, and the AAPA, alone or in combination, do not disclose or suggest at least *switching the first block to represent a second component model in response to a user action indicating a selection of the second component model in the user interface*, as recited by amended independent claim 13.

Further, Applicant submits that Rauw and AeroSim do not disclose or suggest the feature of *the component models belong to a category of wind turbulence models that include at least a discrete turbulence model*, as recited in claim 16. The same arguments that apply to claim 4 apply to claim 16.

Further, Applicant submits that Rauw and AeroSim do not disclose or suggest the feature that *the component models belong to a category of equations of motion models that include at least one simple variable mass model and at least one custom variable mass model*, as recited in claim 17. The same arguments that apply to claim 5 apply to claim 17.

Therefore, Applicant respectfully requests reconsideration and withdrawal of the 35 U.S.C. §103(a) rejection of claims 16-17 and 19-24.

**F. Dependent Claim 3**

The Examiner rejects claim 3 under 35 U.S.C. 103(a) as being unpatentable over AeroSim in view of Rauw, further in view of AAPA, and further in view of An Integrated, Modular Simulation System for Education and Research by Douglas K. Hiranaka (hereafter “Hiranaka”). Applicant respectfully traverses the rejection.

Claim 3 depends from claim 1, and therefore includes each and every feature of claim 1. As noted above in relation to claim 1, AeroSim, Rauw, and the AAPA, alone or in any reasonable combination, do not disclose or suggest *switching the first block to represent a second component model in response to a user action indicating a selection of the second component model in the user interface, without replacing the first block with a second block representing the second component model*, which is present in independent claim 1. Hiranaka also does not disclose or suggest, and the Examiner does not suggest that Hiranaka discloses or suggests, this feature of claim 1.

AeroSim, Rauw, the AAPA, and Hiranaka, alone or in any reasonable combination, do not disclose or suggest each and every element of claim 1, from which claim 3 depends. Thus, AeroSim, Rauw, the AAPA, and Hiranaka, alone or in any reasonable combination, do not disclose or suggest each and every element of claim 3. Therefore, Applicant respectfully requests that the Examiner reconsider and withdraw the 35 U.S.C. §103(a) rejection of claim 3.

**G. Dependent Claim 15**

The Examiner rejects dependent claim 15 under 35 U.S.C. 103(a) as being unpatentable over AeroSim in view of Rauw, further in view of AAPA, and further in view of Hiranaka. Applicant respectfully traverses the rejection.

Claim 15 depends from claim 13, and therefore includes each and every element of claim 13. As noted above in relation to claim 13, AeroSim, Rauw, and the AAPA do not disclose or suggest each and every feature of claim 13. The addition of Hiranaka does not cure the factual deficiencies of the cited prior art with relation to claim 13. In particular, Hiranaka does not disclose or suggest, and the Examiner does not allege that Hiranaka discloses or suggests,

*switching the first block to represent a second component in response to a user action indicating a selection of the second component model in the user interface*, which is present in claim 13. In fact, Hiranaka is silent as to this feature of claim 13.

AeroSim, Rauw, the AAPA, and Hiranaka do not disclose or suggest each and every feature of claim 13, from which claim 15 depends. Therefore, the cited prior art references do not disclose or suggest each and every feature of dependent claim 15. Applicant respectfully requests that the Examiner reconsider and withdraw the 35 U.S.C. §103(a) rejection of claim 15.

#### **H. Independent Claim 25**

The Examiner rejects claim 25 under 35 U.S.C. §103(a) as being unpatentable over AeroSim in view of Hiranaka. Applicant respectfully traverses the rejection.

Independent claim 25 recites:

25. A computer implemented system for designing a target system in which a planetary environment is one of the factors for designing the target system, the system comprising:

a model storage for storing and providing models necessary to design the target system, *wherein the model storage includes at least two different day atmosphere models, wherein at least one of the two different day atmosphere models is a non-standard day atmosphere model*; and

a design unit for designing the target system by utilizing the models provided by the model storage.

Applicant amends independent claim 25 for clarity. Applicant respectfully submits that AeroSim and Hiranaka, alone or in any reasonable combination, do not disclose or suggest at least *the model storage includes at least two different day atmosphere models, wherein at least one of the two different day atmosphere models is a non-standard day atmosphere model*, which is present in independent claim 25. The Examiner acknowledges that AeroSim does not disclose or suggest a non-standard day atmosphere model (Office Action at page 30), and instead relies on Hiranaka for this feature of claim 25.

Applicant submits that Hiranaka does not disclose or suggest a non-standard day atmosphere model. The cited passage from Hiranaka clearly describes a *standard day*

*atmosphere model.* Hiranaka states that the new function described merely applies the standard atmosphere at a higher altitude (Hiranaka at page 64).

In the Advisory Action, the Examiner asks, “why not are non-standard conditions applied to a standard day atmosphere model are not the same as utilizing a non-standard day atmosphere model? [sic]” (Advisory Action at page 2).

A Standard Atmosphere Model is, for example, a representation of the United States standard lower atmospheric values for absolute temperature, pressure, density, and speed of sound for an input geopotential altitude (*U.S. Standard Atmosphere*, 1976, U.S. Government Printing Office, Washington, D.C.). In a standard atmosphere model, such as the one used by Hiranaka, a user inputs the altitude, and the model outputs the standard values for temperature, atmospheric pressure, air density, and the speed of sound at that altitude (*U.S. Standard Atmosphere*, 1976, U.S. Government Printing Office, Washington, D.C.). Hiranaka simply extrapolates standard atmosphere values at a higher altitude than his original standard atmosphere function was capable of (Hiranaka at page 64).

In contrast, a *non-standard* atmosphere model defines non-standard values for temperature, pressure, air density, or the speed of sound that *vary* from the standard temperature, pressure, air density, and speed of sound. For example, a non-standard atmosphere model might be used to calculate an airplane’s required takeoff length on a hot day, as opposed to a day having a standard temperature.

Hiranaka uses *only* a standard model. Merely varying the input altitude, as suggested by the Examiner, does not result in the use of a *non-standard* atmosphere model. Larger-than-normal input values for altitude can be supplied to a standard atmosphere model or a non-standard atmosphere model, but this *does not change the underlying type of atmosphere model* that is used.

For at least the reasons presented above, Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 25 under 35 U.S.C. §103(a).

### I. Dependent Claims 26-37

The Examiner rejects claims 26-37 under 35 U.S.C. §103(a) as being unpatentable over AeroSim in view of Hiranaka. Applicant respectfully traverses the rejection.

Claims 26-37 depend on base claim 25 and as such, incorporate all of the features of claim 25. As noted above with relation to claim 25, the combination of the cited references does not disclose or suggest each and every element of claim 25. Therefore, claims 26-37 are not rendered obvious over the cited references. Applicant therefore requests reconsideration and withdrawal of the rejection of claims 26-37 under 35 U.S.C. §103(a).

### J. Independent Claim 73

The Examiner rejects claim 73 under 35 U.S.C. §103(a) as being unpatentable over AeroSim in view of Hiranaka. Applicant respectfully traverses the rejection.

Independent claim 73 recites:

73. A computer-readable medium holding instructions executable in a computer for the design of a target system, wherein a planetary environment is one of the factors for designing the target system, the instructions comprising:

instructions for providing atmosphere models necessary to design the target system; and

instructions for incorporating the atmosphere models to the target system, *the atmosphere models including at least one atmosphere model that represents a non-standard day atmosphere.*

Applicant respectfully submits that AeroSim and Hiranaka, alone or in any reasonable combination, fail to disclose or suggest at least *the atmosphere models including at least one atmosphere model that represents a non-standard day atmosphere*, which is present in claim 73. As discussed above relative to claim 25, AeroSim and Rauw does not disclose or suggest non-standard day models. For at least the reasons presented above, Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 73 under 35 U.S.C. §103(a).

**K. Dependent Claims 74-79**

The Examiner rejects claims 74-79 under 35 U.S.C. §103(a) as being unpatentable over AeroSim in view of Hiranaka. Applicant respectfully traverses the rejection.

Claims 74-79 depend on base claim 73 and, as such, incorporate all of the features of claim 73 and are in condition for allowance for at least the same reasons presented above relative to claim 73. Applicant respectfully requests withdrawal of the 35 U.S.C. §103(a) rejection of claims 74-79.

**CONCLUSION**

In view of the above, Applicant submits that the pending application is in condition for allowance and urges the Examiner to pass the claims to allowance. Should the Examiner feel that a teleconference would expedite the prosecution of this Application, the Examiner is urged to contact the Applicant's attorney at (617) 227-7400.

Please charge any shortage or credit any overpayment of fees to our Deposit Account No. 12-0080, under Order No. MWS-031. In the event that a petition for an extension of time is required to be submitted herewith, and the requisite petition does not accompany this response, the undersigned hereby petitions under 37 C.F.R. §1.136(a) for an extension of time for as many months as are required to render this submission timely. Any fee due is authorized to be charged to the aforementioned Deposit Account.

Dated: December 1, 2008

Respectfully submitted,

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